9-6-2012

Urban Lake Shoreline Characteristic Assessment in Cuyahoga County

Kathryn E. Johncock
Cleveland State University, K.JOHNCOCK@csuohio.edu

Urban Lake Shoreline Characteristic Assessment in Cuyahoga County

College of Sciences and Health Professions

Department of Biological, Geological, and Environmental Sciences

Student Researcher: Kathryn Johncock

Faculty Advisor: Julie A. Wolin, Ph.D.

Abstract

More than 100 mid-size inland lakes and reservoirs (greater than 2.5 acres) are located in highly urbanized Cuyahoga County. Surrounding development, along with poor management and neighboring land-use practices, can greatly influence the water quality of these aquatic ecosystems. Runoff, caused by an increase in impervious surface or a lack of shoreline vegetation, results in excess nutrients entering lakes and is a leading cause of eutrophication. Eutrophication, or over-enrichment by nutrients, stimulates excessive algae and macrophyte (submerged plant) growth. When these organisms die, they settle onto the sediment where they decompose and often create low-oxygen environments, compromising the health of the freshwater community. We assessed shoreline characteristics, macrophyte cover, and algal presence for 35 inland lakes within Cuyahoga County to determine whether there is a correlation between shoreline characteristics and the presence and abundance of algae and submerged plants.